Big Cypress Basin

Operation Schedule of Water Control Structures

January 2000

Introduction

The objectives of the 163 miles of primary canals and 40 water control structures (see figure 1) of the Big Cypress Basin are to provide flood control during the wet season and to protect the water supplies and environmental resources from overdrainage of fresh water during the dry season.

The resource protection objectives include prevention of saltwater intrusion into freshwater supplies, recharging of the public water supply wellfields, and protection and enhancement of the regional ecosystem functions.

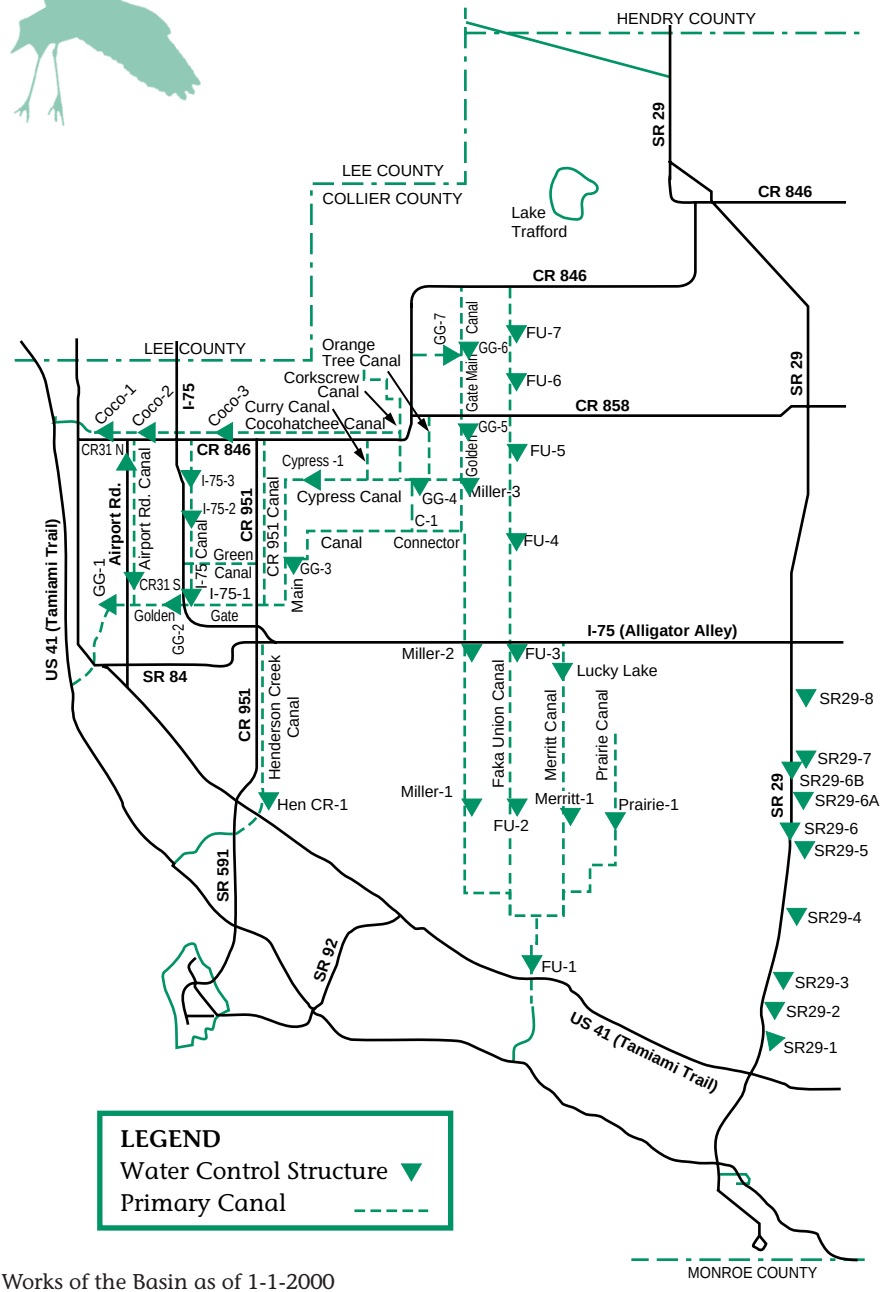
These objectives are achieved through scheduled operations of the water control structures to accommodate quick removal of runoff during the wet season and partial or full closure of the gates during the dry season.

The schedule must have the flexibility to address the difficult balancing act of the transition from wet to dry season and likewise from dry to wet season, as well as anticipate and prepare for major storm or drought events.

In order to optimize the system, it is essential to constantly collect and analyze surface and groundwater conditions, land development patterns and rainfall data (rainfall intensity varies for areas throughout the basin.)

Due to so many variables involving the operation of the structures such as, the location of the structure, size of drainage area, adjacent land use, inflow from secondary drainage system, gate operating mechanism, etc., a single set of criteria may not work for the entire basin. The criteria and schedule furnished here should not be considered fixed, as we will continue to monitor the performance of the gate operations and make improvements for more efficient water management. ❖

Big Cypress Basin
Primary Canal System and Water Control Structures



LEGEND

Water Control Structure ▼

Primary Canal ----

Works of the Basin as of 1-1-2000

Basic Operating Schedule of Big Cypress

SERIAL #	STRUCTURE	TYPE	W
1	Golden Gate Canal Weir #1	Movable Crest Weir	
2	Golden Gate Canal Weir #2	Fixed Crest with 2 Gates	
3	Golden Gate Canal Weir #3	Fixed Crest with 2 Gates	
4	Golden Gate Canal Weir #4	Fixed Crest with 2 Gates	
5	Golden Gate Canal Weir #5	Fixed Crest with 2 Gates	
6	Golden Gate Canal Weir #6	Fixed Crest with V-Notch	
7	Golden Gate Canal Weir #7	Fixed Crest with V-Notch	
8	I-75 Canal Weir #1	Fixed Crest with 1 Gate	
9	I-75 Canal Weir #2	Fixed Crest with 2 Gates	
10	I-75 Canal Weir #3	Fixed Crest with 2 Gates	
11	Cypress Canal Weir 4A1	Fixed Crest with 2 Gates	
12	Airport Road Canal North	Amil Gate	
13	Airport Road Canal South	Amil Gate	
14	Faka Union Canal Weir #1	Fixed Crest	
15	Faka Union Canal Weir #2	Fixed Crest with Steel Gates	
16	Faka Union Canal Weir #3	Fixed Crest with V-Notch	
17	Faka Union Canal Weir #4	Fixed Crest with Steel Gates	
18	Faka Union Canal Weir #5	Fixed Crest Sheet Pile Weir	
19	Faka Union Canal Weir #6	Fixed Crest with V-Notch	
20	Faka Union Canal Weir #7	Fixed Crest with V-Notch	
21	Miller Canal Weir #1	Fixed Crest with Steel Gates	
22	Miller Canal Weir #2	Fixed Crest with V-Notch	
23	Miller Canal Weir #3	Fixed Crest with V-Notch	
24	Lucky Lake Weir	Fixed Crest with 2 Steel Gates	
25	Merritt Canal Weir #1	Adjustable Concrete Blocks	
26	Prairie Canal Weir #1	Adjustable Steel Plates	
27	Henderson Creek Weir #1	Gated Spillway	
		Flap Gate	
		East Side Channel	
		West Side Channel	
28	Cocohatchee Canal Weir #1	Gated Spillway	
29	Cocohatchee Canal Weir #2	Gated Spillway	
30	Cocohatchee Canal Weir #3	Gated Spillway	
31	S.R. 29 Canal Weir #1	Fixed Crest with Removable Steel Sheets	
32	S.R. 29 Canal Weir #2	Fixed Crest with Removable Steel Sheets	
33	S.R. 29 Canal Weir #3	Fixed Crest with Removable Steel Sheets	
34	S.R. 29 Canal Weir #4	Fixed Crest with Removable Steel Sheets	
35	S.R. 29 Canal Weir #5	Fixed Crest with Removable Steel Sheets	
36	S.R. 29 Canal Weir #6	Fixed Crest with Removable Steel Sheets	
37	S.R. 29 Canal Weir #6A	Gated Weir	
38	S.R. 29 Canal Weir #6B	Gated Weir	
39	S.R. 29 Canal Weir #7	Fixed Crest with Removable Steel Sheets	
40	S.R. 29 Canal Weir #8	Fixed Crest with Removable Steel Sheets	

*** Elevation of top of concrete headwall, not weir crest.**

Basin Water Control Structures

WEIR CREST ELEVATION	OPERATING ELEVATIONS			
	WET SEASON		DRY SEASON	
	OPEN AT	CLOSE AT	OPEN AT	CLOSE AT
2.00/3.35	3.85	2.50	3.85	2.75
5.00	5.50	5.00	6.00	5.25
7.50	8.00	7.50	8.50	7.75
9.50	10.00	9.50	10.50	9.75
10.50	11.00	10.50	11.50	10.75
12.10	12.60	12.10	13.10	12.35
13.10	13.60	13.10	14.10	13.35
6.20	6.70	6.20	7.20	6.45
8.00	8.50	8.00	9.00	8.25
10.00	10.50	10.00	11.00	10.25
9.50	10.00	9.50	10.50	9.75
8.50	7.50	-----	8.50	-----
8.50	7.50	-----	8.50	-----
2.00	-----	-----	-----	-----
3.87	6.20	5.20	6.20	5.70
6.20	6.70	6.20	7.20	6.45
9.21	11.51	10.51	12.51	11.51
11.00	-----	-----	-----	-----
14.50	15.00	14.50	15.50	14.75
16.70	17.20	16.70	17.70	16.95
4.15	5.00	4.00	5.00	4.50
6.20	6.70	6.20	7.20	6.45
10.50	10.50	9.50	10.50	10.00
4.5	7.00	6.50	9.80	9.30
9.02	5.50	4.00	6.50	5.50
9.05	5.50	4.00	6.50	5.50
5.00	5.00	4.50	6.00	5.50
.50	5.75	5.50	5.75	5.50
3.52	5.00	4.00	6.00	5.50
3.45	4.50	3.45	5.00	4.50
6.50	6.00	4.50	6.20	5.20
10.00	8.50	7.50	9.50	8.50
12.00	11.50	10.00	11.80	10.80
3.21*	2.71	1.21	3.21	2.21
3.56*	3.06	1.56	3.56	2.56
5.44*	4.94	3.44	5.44	4.44
7.91*	7.41	5.91	7.91	6.91
11.22*	10.72	9.22	11.22	10.22
11.40*	10.90	9.40	11.40	10.40
11.00	10.50	9.50	11.00	10.50
11.00	10.50	9.50	11.00	10.50
11.14*	10.64	9.14	11.14	10.14
11.93*	11.43	9.93	11.93	10.93

GLOSSARY

AMIL GATE - An automated gate which maintains a constant upstream water elevation.

AQUIFER - A layer of underground permeable rock, sand or gravel which is saturated with water.

BIG CYPRESS BASIN - One of two administrative units in the South Florida Water Management District with its own Governing Board encompassing all of Collier county and part of Monroe county whose purpose is to provide flood control, ensure water supply, water quality and environmental protection and enhancement.

DRY SEASON - The time beginning in November and ending in April usually characterized by little rainfall (approximately 20% of annual total.)

GATE - A component of a water control structure which allows the flexibility to remain closed during dry weather to help maintain a desired groundwater table and can be opened to release water during wet weather.

NGVD - An abbreviation for "National Geodetic Vertical Datum" which is used as a reference for measuring elevation, similar to mean sea level.

PRIMARY CANAL SYSTEM - Canal systems which are the primary drainage component on a regional scale.

RECHARGE - Water seepage through the ground to rejuvenate underground aquifers.

SALTWATER INTRUSION - The irreversible process by which the natural saltwater/freshwater interface moves inland, usually as a result of reduction of freshwater head caused by overdrainage, insufficient recharge or drawdown by well pumpage.

SECONDARY CANAL SYSTEM - Canal systems providing drainage to several individual users on a local scale. The secondary system ultimately drains into the primary canals.

SPILLWAY - A special water control structure designed to efficiently and carefully convey flood discharges that are not normally handled through regular outlets. The spillway also acts as a barrier to prevent overdrainage during the dry season.

WATER CONTROL STRUCTURE - Any man-made feature used to control water elevation and/or water flow.

WATER MANAGEMENT DISTRICT - One of five quasi-state governmental entities created in 1972 by the Florida State Legislature to serve Florida's demanding and diverse water needs.

WEIR - A small dam in a canal, usually with a specially shaped crest (top) to enable water to move more freely over the top.

WEIR CREST - The highest elevation on the weir, above which water begins to flow over.

WELLFIELD - In reference to underground water supply wells, that area which is influenced by a group of wells and their pumpage.

WET SEASON - The months from May through October characterized by late afternoon thundershowers and tropical weather activities when nearly 80% of the annual rainfall is received.

Big Cypress Basin

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